



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/883,992	06/20/2001	Michael LoCascio	11739/9	5650

23838 7590 06/15/2005

KENYON & KENYON  
1 BROADWAY  
NEW YORK, NY 10004

EXAMINER

PHAN, HANH

ART UNIT PAPER NUMBER

2638

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/883,992	LOCASCIO ET AL.	
	Examiner	Art Unit	
	Hanh Phan	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26-33, 36 and 37 is/are allowed.
- 6) ☒ Claim(s) 1, 3-12, 18-23, 25, 34 and 35 is/are rejected.
- 7) ☒ Claim(s) 2, 13-17 and 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>06/20/01, 01/29/02</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 10, 18, 25 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nowatzky (US Patent No. 6,262,823) in view of Bottle (US Patent No. 5,535,032) and further in view of Das et al (US Patent No. 5,703,708).

Regarding claims 1, 18 and 34, referring to Figures 3 and 4, Nowatzky discloses a multiplexing/demultiplexing system comprising:

a multiplexor (i.e., multiplexer 411, Fig. 4) comprising:

a first plurality of optical modulators (436, Fig. 4) having a plurality of outputs;

a first plurality of optical delay elements (431, Fig. 4);

a source of optical light (413, Fig. 4) coupled to the delay elements (431);

and

an optical combiner (411, Fig. 4) coupled to the plurality of outputs and a source of framing pulses (see col. 2, lines 23-67 and col. 3, lines 1-67).

Nowatzky differs from claims 1, 18 and 34 in that he does not specifically teach the optical modulators are optical switches and the delay elements coupled to the

optical modulators. However, Bottle in US Patent No. 5,535,032 teaches the optical modulators are optical switches (Figs. 1 and 2, see from col. 3, line 46 to col. 5, line 30) and Das in US Patent No. 5,703,708 teaches the delay elements coupled to the optical modulators (Fig. 2, col. 2, lines 65-67 and col. 3, lines 1-62). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the optical modulators are optical switches and the delay elements coupled to the optical modulators as taught by Bottle and Das in the system of Nowatzky. One of ordinary skill in the art would have been motivated to do this since Bottle suggests in col. 3, line 46 to col. 5, line 30 and Das suggests in col. 2, lines 65-67 and col. 3, lines 1-62 that using such the optical modulators are optical switches and the delay elements coupled to the optical modulators have advantage of allowing providing an optical time division multiplexing system with high capacity and high speed.

Regarding claim 10, Nowatzky further teaches the source of optical light is a laser (413, Fig. 4).

Regarding claim 25, Nowatzky further teaches the optical combiner generates a time division multiplexed output signal (Figs. 3 and 4).

3. Claims 3-9, 19 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nowatzky (US Patent No. 6,262,823) and Bottle (US Patent No. 5,535,032) in view of Das et al (US Patent No. 5,703,708) and further in view of Yamaguchi (US Patent No. 6,323,983).

Regarding claims 3, 8, 9, 19 and 35, Nowatzky as modified by Bottle and Das teaches all the aspects of the claimed invention except fails to teach the first plurality of optical switches comprise a saturable absorber switch or a nonlinear optical loop Mirror or a Mach Zender interferometer. However, Yamaguchi in US Patent No. 6,323,983 teaches a saturable absorption type optical switch (Fig. 5, col. 1, lines 5-7, col. 3, lines 60-67 and col. 4, lines 1-6). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the saturable absorption type optical switch as taught by Yamaguchi in the system of Niwatzky modified by Bottle and Das. One of ordinary skill in the art would have been motivated to do this since Yamaguchi suggests in col. 1, lines 5-7, col. 3, lines 60-67 and col. 4, lines 1-6 that using such the saturable absorption type optical switch has advantage of allowing providing an optical switch with simple circuit structure and increased its response speed.

Regarding claims 4-7 and 20-23, it would have been obvious to obtain the saturable absorber switch comprises a saturable absorber having quantum dots in order to reduce the optical loss and reduce signal noise and jitter and power consumption.

#### ***Allowable Subject Matter***

4. Claims 2, 13-17 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
5. Claims 26-33, 36 and 37 are allowed.

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yoneyama (US Patent No. 6,178,022) discloses optical time division multiplexing transmission.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (571)272-3035.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.

  
**HANH PHAN**  
**PRIMARY EXAMINER**